notably in 1895 by the addition of the Schorlemmer laboratory; the engineering laboratory was opened in 1887 and has been greatly enlarged since; the large Beyer biological laboratories and the museum buildings were completed in the same year; the medical school was extended in 1883 and doubled in size in 1894; the Christie library was opened in 1898, the new physical laboratories (on a separate site) in 1900.

The Prince of Wales inaugurated the jubilee ceremonies of the College yesterday by opening the noble Whitworth Hall, which completes the large quadrangle of the College. It will be remembered that the late Sir Joseph Whitworth left the bulk of his fortune to Lady Whitworth, Mr. R. C. Christie and Mr. R. D. Darbishire, with absolute discretion as to the disposal of the money; of this more than 120,000*l*. has been given to Owens College by the legatees, jointly or severally. The late Mr. Christie, himself for many years a professor at Owens, after presenting the College with a beautiful library building from his private purse, gave in 1897 the residue of his share of the Whitworth bequest, amounting to about 50,000*l*., for the building of a college hall, to be named after Whitworth. This hall, designed like the rest of the main buildings of the College by Messrs. Waterhouse and Son, is in the Gothic style, and is 120 feet long and 50 feet wide. It has a beautiful and elaborate high-pitched oak roof, of which the apex is 56 feet from the floor. The principals are supported on columns of granite. The sides of the hall are of polished stone with a panelling of polished oak. At the north end is an organ (the gift of Mrs. Rylands), encased in a fine screen of carved oak, and on a level with the organ loft, and adjoining it, are galleries for a choir. Immediately in front of the organ is a daïs, a few feet above the level of the floor. The hall is lighted by a series of stained glass windows on either side, and by a great window, in the perpendicular style, at the south end, in which the arms of the founder of the College and its chief benefactors have been inserted. The floor slopes slightly upwards from north to south, and at the extreme end of the hall there is a raised platform so that all can see the north daïs. Two small galleries are placed across the south corners of the hall, each adjoined by a short lateral gallery. The hall itself seats between nine hundred and a thousand persons. It forms the first story of the Whitworth building, of which the basement contains smaller rooms, destined for university offices, &c. There are exits into the museum and library, and also three exits on to Oxford Street and Burlington Street.

The order for the proceedings for the jubilee was as follows:—

Wednesday, March 12, 11.30, commemoration of the foundation of the College and opening of the Whitworth Hall, by H.R.H. the Prince of Wales (accompanied by H.R.H. the Princess of Wales); 2.15, luncheon at the Town Hall by invitation of the Lord Mayor of Manchester, and at the College by invitation of the College authorities; 8.30, reception at the College, by the president, the Duke of Devonshire, K.G., and council.

Thursday, March 13, 11.0, presentation of addresses of congratulation from universities and learned societies in the Whitworth Hall and conferring of honorary degrees by the chancellor of the Victoria University, Earl Spencer, K.G.; 7.30, dinner given by the College to delegates and to the governor and staff of the College.

Representatives from a number of foreign and colonial universities and learned societies arranged to be present, among them being the following:—Foreign universities and societies: Paris, Prof. A. Espinas; Lille, Prof. A. Angellier; Académie des Sciences (Institut de France), Prof. H. Becquerel; Munich, Prof. Hermann Breymann and Prof. K. Goebel; Göttingen, Prof. Walther Nernst; Göttingen (Royal Academy of Sciences), Prof. Voigt; Lund, Mr. Vice-Consul H. Ehrenborg; Geneva, Prof. Chodat; California, Prof. F. Slate; Western Reserve (Ohio), Prof. H. E. Bourne; Zürich Polytechnic, Dr. E. Knecht. Indian, Colonial universities and learned societies: McGill (Montreal), Lord Strathcona, G.C.M.G. (High Commissioner for Canada); Calcutta, Dr. William Booth; Bombay, Sir J. Jardine, K.C.I.E.; Madras, Mr. J. B. Bilderbeck; Cape of Good Hope, Mr. T. E. Fuller (Agent-General for Cape Colony); Adelaide, Prof. Hudson Beare. In addition delegates were sent by the universities of the United Kingdom, university colleges, and most of the learned societies.

It may be mentioned that at the opening of the College among the members of the staff, which consisted of a principal, four other professors and two teachers, were Archibald Sandeman, professor of mathematics; Dr. Edward Frankland, professor of chemistry; and W. C. Williamson, professor of natural history, botany and geology. There were sixty-two students in the first session. The staff now consists of the principal, Dr. Alfred Hopkinson, and thirty-one other professors and eighty lecturers and assistant lecturers; and the College has between a thousand and eleven hundred students in its various departments of arts, science, law and medicine.

NOTES.

WE regret to see the announcement of the death of Prof. Maxwell Simpson, F.R.S., formerly professor of chemistry in Queen's College, Cork, at the age of eighty-seven; and also of Mr. Bryan Donkin, a vice-president of the Institution of Mechanical Engineers, at the age of sixty-seven.

PROF. J. KUEHN, professor of agriculture in the University of Halle, has been elected a correspondant of the Paris Academy of Sciences, in the section of rural economy.

THE Raoult memorial lecture of the Chemical Society will be delivered by Prof. van 't Hoff on Wednesday, March 26, in the lecture theatre of the Royal Institution. The annual general meeting of the Society will be held on the afternoon of the same day.

AN interesting Easter excursion to the Gower Peninsula, South Wales, has been arranged by the Geologists' Association. The party will leave London on Thursday, March 27, and will return on Wednesday, April 2. The district is rich in fine rock scenery, instructive exposures and cliff sections, and splendid views, so that those who are able to take part in the excursion may be assured of a pleasant holiday.

THE Paris Natural History Museum celebrated on Sunday last the fiftieth anniversary of the publication of the first scientific memoirs of one of the most distinguished members of its staff, M. Albert Gaudry. He was honoured, says the Paris correspondent of the *Times*, as one of the most eminent evolutionists in France, in many respects a precursor of Darwin. It is he, in the words of M. Edmond Perrier, the director of the museum, who has virtually emancipated palæontology from the swaddling clothes in which its mother science, comparative anatomy, had endeavoured so long to keep it.

PROF. MELDOLA'S address on the coming of age of the Essex Field Club, which will be given at the twenty-second annual meeting, to be held in the Essex Museum, Stratford, on Saturday, March 22, should be worth the attention of those interested in naturalists' societies or desiring to encourage their efforts. A carefully digested record of the *local* scientific work carried on by the

Club and its members will be of great value. Since its foundation in 1880, the Society has published about 5000 pages of matter, three-fourths of which relates to the natural history, in the widest sense, of the county of Essex, and much of it is wholly original in character. Any reader desiring to attend the meeting should communicate with the hon. secretary, Mr. W. Cole, Buckhurst Hill, Essex.

A MEETING of the American Philosophical Society will be held at Philadelphia on April 3-5. Among the subjects of papers included in the preliminary programme are:—The International Catalogue of Scientific Literature, Dr. Cyrus Adler; recent progress in the lunar theory, Prof. E. W. Brown, F.R.S.; systematic geography, Prof. W. M. Davis; results of observation with the zenith telescope at the Sayre Observatory, Prof. C. L. Doolittle; the advancement of knowledge by the aid of the Carnegie Institution, President D. C. Gilman; the continuity of protoplasm, Prof. H. Kraemer; further experiments on the physiological action of ions, Dr. Jacques Loeb; wireless telegraphy, Mr. Guglielmo Marconi (if in America); distribution of fresh water decapods and its bearing upon ancient geography, Dr. Arnold E. Ortmann; evolution and distribution of the Proboscidea in America, Prof. H. F. Osborn; the relation of the American University to science, President H. S. Pritchett; South American mammals, Prof. W. B. Scott; historical investigation of the supposed changes in the colour of Sirius since the epoch of the Greeks and Romans, Dr. T. J. J. See; and biological heredity and organic evolution, Prof. Giuseppe Sergi.

THE ninth meeting of the Australasian Association for the Advancement of Science was held at Hobart on January 8-16, under the presidency of Captain F. W. Hutton, F.R.S., whose address on evolution and its teaching was abridged in last week's NATURE. The presidents of the sections and the subjects of their addresses were as follows:—Mr. R. W. Chapman (astronomy, mathematics, physics and mechanics), tidal theory and its application; Prof. A. M. A. Mica-Smith (chemistry and mineralogy), the study of the chemistry of the air, and whither it has led; Prof. T. S. Hall (geology and palæontology), the possibility of detailed correlation of Australian formations with those of the mother hemisphere; Prof. W. B. Benham (biology), earthworms and palæo-geography; Rev. Geo. Brown (geography), the Pacific, east and west; Mr. T. A. Coghlan (economic and social science and statistics), the statistical question; Dr. W. E. Roth (ethnology and anthropology), on the games, sports and amusements of the North Queensland aboriginals; Sir T. Fitzgerald (sanitary science and hygiene), the nature of diseases; Prof. A. Wall (mental science and education), poetry as a factor in education; Mr. P. Oakden (architecture and engineering), no title announced. Many papers were read in each of the sections, and from the titles in the official programme we judge that a large proportion was of wide scientific interest. The handbook prepared for the use of the members contains a short historical sketch of Tasmania, and essays on the natural history of the country. These signs of scientific activity at the antipodes are of interest to those who regard contributions to natural knowledge as essential to the development of national character and progress.

PROF. W. R. DUNSTAN, F.R.S., director of the scientific department of the Imperial Institute, presided on March 4 at the first of a series of six lectures and demonstrations which are being given at the Institute by Mr. R. Hedger Wallace, formerly of the Victorian Agricultural Department, on "The Commercial Products and Agricultural Resources of the Crown Colonies." In his introductory remarks, the chairman explained the object of the course. The Imperial Institute contains magnificent collections of products, illustrative of the natural resources of the colonies, and it is hoped that by lectures and demonstrations such as these the interest and utility of the collections to the general public will be much increased. Following each lecture, Mr. Wallace will give a demonstration in the particular court containing the products of the colony described. A large and increasing number of schools throughout the United Kingdom have applied to the Imperial Institute for small collections of various colonial products, and it is therefore hoped that this course will attract both teachers and pupils. Mr. Wallace began by directing attention to the fact that the value of the imports and exports of Great Britain last year was 522,000,000*l.* and 280,000,000*l.* respectively. It is a matter of importance, therefore, to ascertain whether this adverse balance of 242,000,000*l.* passes to the British planter and manufacturer, and remains within the Empire, or goes to foreign countries. Hence also the desirability of ascertaining what can most profitably be grown in our various colonies. From this point of view England has much to learn from Germany. That country has recently sent out scientific experts to report on the natural resources of its colonies and to ascertain by practical experiment how capital can be most profitably invested. In England, on the other hand, this matter is left largely to private enterprise.

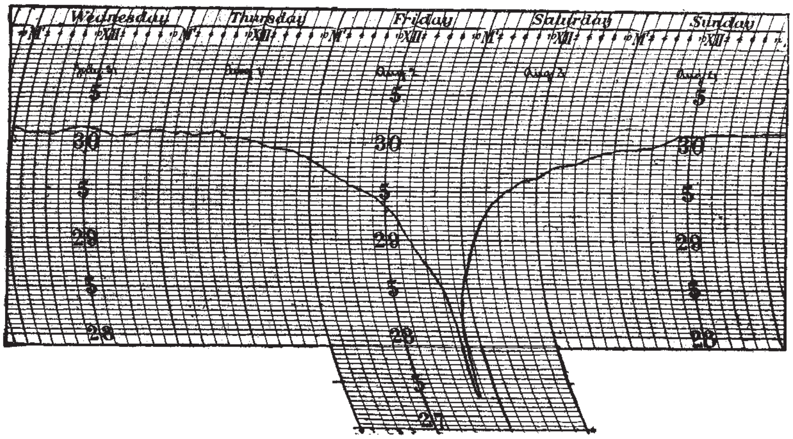
THE influence of mountains on the fall of hail has frequently been the subject of controversy, but up to the present time no certain conclusion appears to have been arrived at. The Italian Meteorological Office has recently published an interesting note upon the question by Prof. V. Monti. The positions chosen were perhaps the most suitable for the purpose of any among the Italian network of stations, viz. the Collegio Romano and Montecavo, an isolated station near Rome, situated at an altitude of about 1000 metres; the complete observations at both stations, for the years 1880-87, are contained in the *Annals* of the Italian Meteorological Office. During this period, forty-one days of hail were recorded at Rome against eighty at Montecavo; the monthly values show two maxima, in April and October, and two minima, in July and December, as regards the excess of days of hail at the mountain station. A comparison of days of thunderstorm shows, on the other hand, that there were 176 such storms at Rome, against 129 at Montecavo. This seems to show that the excess of hail at the mountain station is not attributable to a greater intensity of atmospheric electricity. The author gives a table showing that the monthly mean temperature at Rome is at times about 10° higher than at Montecavo, and suggests that the fusion of the hail in traversing a warmer stratum of air may to some extent account for the smaller amount at the lower station.

PROF. TINE TAMMES describes in the *Zeitschrift für wissenschaftliche Mikroskopie*, xviii. p. 280, a convenient form of electrical lamp for use with the microscope, which has been introduced into the Botanical Laboratory at Groningen. The lamp itself is an incandescent lamp of about 4 cm. diameter, and is enclosed in an iron box the weight of which adds to its steadiness. This box is open at the front and back, the back opening letting out the heat while the front opening is furnished with grooves for inserting glass plates. The front plate is of ground glass, specially chosen for its low absorbing power and absence of coarse grain, and this gives a uniformly bright area as source of illumination. Behind this is a screen of cobalt or other coloured glass for absorbing the superfluous yellow rays.

A PAPER on the metallography or photomicrography of iron and steel is communicated to the *Journal* of the Royal Microscopical Society for February by Mr. William H. Merrett.

The subject is one of recent development, and among other workers the names of Dr. Sorby, Profs. Marten and Wedding, and M. Osmond, of Paris, are mentioned. The paper deals with the analogy between the transformations occurring in steel and in frozen saline solutions, taking as illustrations Sir W. C. Roberts-Austen's diagrams of equilibrium curves. The methods of preparing and polishing steel for opaque examination are described, including Prof. Le Chatelier's method of obtaining sufficiently fine polishing powders. The paper is illustrated by several photographs of the different constituents of iron and steel under a magnification of 850 diameters. Although metallography was originally of scientific interest only, it has now become of the greatest commercial importance.

A VERY remarkable barograph trace obtained during a typhoon on August 2-3, 1901, is given in the *Quarterly Journal* of the Royal Meteorological Society (January), and is here reproduced with the permission of the Society. The barograph was on the steamer *Laisang*, which encountered the typhoon somewhere to the northward of the Formosa Channel, in about lat. 25° N., long. 122° E. or thereabouts. The fall and rise of the barometer were most rapid, the range being no less than two inches in eight hours. The chart shows the minimum reading to have been as low as 27·35 in. at 9 p.m. on August 2. Such a low barometer reading is said in the note from which these particulars are derived to have been rarely recorded. It was, however, exceeded on the following occasions:—27·33 in., February 5, 1870, on board H.M.S. *Tarifa*, 500 miles west of Ireland. 27·332 in., January 26, 1884, Ochtertyre, near Crieff, Scotland (*Quarterly Journal* Royal Meteorological Society, vol. x. p. 114). 27·135 in., September 22, 1885, False Point, Orissa, India (NATURE, vol. xxxv. p. 344). 27·38 in., December 8, 1886, Belfast; probably about 27·28 in. over the north of Ireland (*Quarterly Journal* Royal Meteorological Society, vol. xiii. p. 211).



Barograph trace during typhoon, August 2-3, 1901.

IN the *Irish Naturalist* for March, Dr. R. F. Scharff records the stranding in Dublin Bay of a specimen of the white-beaked dolphin (*Lagenorhynchus albirostris*). The specimen, which is a male, seems of unusually large size, measuring 12 feet in length, the species being stated in text-books not to exceed 9 feet.

STUDENTS of "distribution" will be interested in a paper by Dr. D. Sharp on Oriental beetles which appears in the March number of the *Entomologists' Monthly Magazine*. The author states that in the group Limnichini—the members of which are remarkable for their death-feigning instinct—he finds a remarkable similarity between the Central American and Oriental forms, amounting in one instance to generic identity.

WE have received the second number of the *Nature-Study Journal*, published by the South-Eastern Agricultural College, Wye, Kent. It contains a description of a country walk through a fossiliferous district in autumn, in which attention is directed to the objects of natural history met with, and also samples of "nature-lessons" for children. The editor asks for outlines of a series of lessons suitable for the same purpose.

IN their eleventh annual report, the Society for the Protection of Birds record an increase in the number of their associates, although they have to deplore a falling-off in subscriptions. With the aid of the Royal Society for the Prevention of Cruelty to Animals, the Society has succeeded in obtaining several convictions during the past year, one of the most satisfactory being in the case of a gamekeeper charged with shooting two of the bustards introduced by Lord Walsingham into Norfolk. Some—although not a great—effect appears to have been made upon the plume-trade by the efforts of the Society; but the recent fashion for the skins of entire terns and the wings of gulls as decorations for ladies' hats is a cause for much regret. So great is the demand for these objects that in Yorkshire alone a single dealer is stated to have contracted to supply 10,000 skins to a London firm. The subject of the Society's second essay competition was "the best means of introducing Bird and Arbor Day into England"; and now that the prizes have been awarded, the Society is hopeful that Coronation year may mark the institution of such a day in all the schools of the country.

THE accompanying diffraction effect is reproduced from a plate contributed by Prof. W. S. Franklin to the January number of the *Physical Review*, and represents one of a number of photographs of shadows cast upon a photographic plate from a monochromatic point of light distant about sixteen metres from the plate. The objects casting the shadows were about three metres from the plate, which was in each case at right angles to the incident light. The

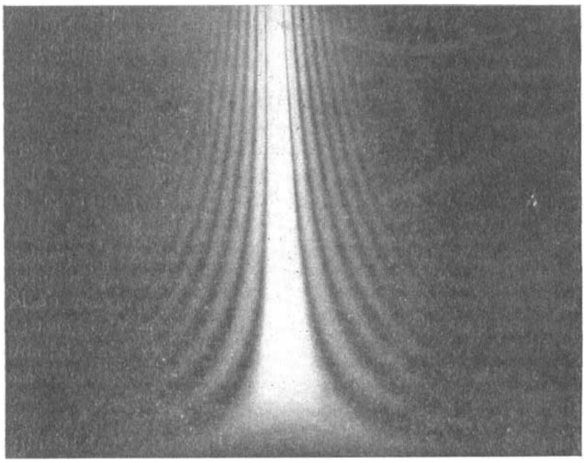


FIG. 1.—Diffraction Shadows of a Tapering Slit.

photograph here reproduced shows the shadow of a slit between very carefully worked edges of brass. The slit was about fifteen centimetres in length, tapering from a width of 0·05 centimetre at one end to nearly zero at the other.

IN a recent issue of the *Actes* of the Scientific Society of Chili (vol. xi. part 3), Señor F. Albert publishes an account of the different species of seals frequenting the coasts of that country, together with a summary of the legislation for their protection. It is satisfactory to learn that the Government are fully alive to the necessity for such protection and are doing all they can to see that the various enactments are duly carried out. The regulations forbid any but Chilian subjects to shoot seals or otters at all, while they establish a close time lasting from the beginning of November till the end of February.

To shake about 200,000 peach trees and 50,000 plum trees for the purpose of dislodging injurious insects is a formidable task, yet it was successfully accomplished several times between April 18 and June 1, 1901, by the Hale Georgia Orchard Company at Fort Valley, Georgia, U.S.A. The insect against which this action was taken was the curculio beetle. The San Jose scale, so prevalent in south Georgia, is thoroughly controlled by the kerosene-water treatment, the beach-tree borer is held in abeyance by the cutting-out method, and the brown rot is fairly well controlled by the Bordeaux treatment, but the curculio baffles all contrivances for its destruction except the tedious method of shaking the trees on which they occur and catching the beetles as they fall. The accompanying illustration from a paper by Messrs. W. M. Scott and W. F. Fiske, in the *Proceedings* of the thirteenth annual meeting of the Association of Economic Entomologists, shows a gang at work catching beetles on sheets stretched upon frames, as they are shaken off the trees. With eleven pairs of sheets, about 40,000 trees were treated in the course of a day. About 137,000 of the beetles were caught and killed during the season, and as a large proportion must have been females capable of depositing eggs, an immense amount of damage was prevented by the work.

Gang at work catching beetles shaken off fruit trees in Georgia.

To Mr. O. Voges, of Buenos Ayres, is due the credit of having discovered the smallest bacillus which has yet been identified. It is much smaller than the influenza bacillus, and is only just discernible when magnified about 1500 times. These very minute rods were obtained from abscesses which cattle suffer from in South America, producing a disease known as manquea amongst other names. It is usually found in quite young cattle, and is easily recognisable by the characteristic lameness of one leg which it produces. The bacillus is an anærobe, and produces in artificial cultures the same highly offensive odour which is associated with it in the abscess. Mice, rats and rabbits are quite immune to its action, but guinea-pigs succumb in from 24–48 hours, and the bacilli are found in the heart's blood and all internal organs. Inasmuch as the action of such well-known anærobic pathogenic bacteria as those of tetanus and symptomatic anthrax is due to their toxic products, filtrates of liquid cultures of this bacillus were tested for their toxicity, but even guinea-pigs did not react to such injections, and therefore Voges concludes that the pathogenic action is due to the bacilli themselves and not to their products. An interesting fact noted by Voges is that the animals he inoculated only succumbed when the weather was hot; not once in the winter could he successfully infect one animal. This is also true of the disease in its ordinary course, as the hotter the climate the more fatal are the results. If the abscess is opened in its early stages the disease is arrested and the animal recovers. This simple remedy is recommended by Voges.

THE fourth and concluding number of the second volume of the *West Indian Bulletin* contains several interesting articles. One on the Jamaica fruit trade is a reprint of an account given by a special correspondent in the *Times*, and deals mainly with the successful inauguration of the shipping of bananas to England last year. Mr. A. R. Gilzean contributes a sketch of the history of rice-growing in British Guiana. As a very large proportion of the population of the country is composed of East Indian coolies well acquainted with rice cultivation, there can be no doubt that in time rice will become an important article of commerce, the local conditions being described as ideal. An account is given of recent experiments with sweet potatoes, the cultivation of different varieties in various islands, methods of storage, preparation of meal, &c. Sweet potatoes form a staple food in the islands, and the Imperial Department of Agriculture is endeavouring to induce English people to cultivate a taste for the vegetable by sending fortnightly supplies to London, printed information being given to purchasers as to fifteen different ways of preparing for table. Mr. Maxwell-Lefroy has a lengthy article on suggestions for insect control in the West Indies. He proposes five principal ways of attacking the problems—measures to prevent the introduction of new diseases (such as quarantine or the regulation of plant importation); the adoption of preventive measures; also of remedial measures; the encouragement of useful native birds and other organisms; and the introduction of new insectivorous birds, insects, &c., and the regulation of the importation of new animals. Other papers relate to bee-keeping, "thrips" and "witch-broom" diseases on cacao, methods for destroying land crabs, treatment of imported plants at Jamaica, citrate of lime and concentrated lime juice, &c. The number includes the index to the volume.

THERE are several indications in various islands of the Indo-Pacific region that the fact of being tattooed is thought to be beneficial when the soul passes into the next world. The last example of this belief is an account in *Globus* (Bd. lxxxi. p. 46), by Prof. G. Thilenius, of the tattooing of women in the Laughlan Islands, or Nada, a small group of islands east of the southern end of New Guinea. A considerable surface of the women is tattooed with angled designs, but concentric circles are tattooed on the legs. The belief is that between the Laughlan Islands and the island of Vatum in the Trobriand group, to which their souls should go, there is a great snake over which they must pass. The snake asks each soul for her tattooing. The soul takes off her tattooing and gives it to the snake, who covers itself with it. The snake then becomes broad and flat and the soul passes over, as on a bridge. If the soul is not tattooed the snake shrinks, becomes very narrow, and the soul falls into the sea and cannot reach Vatum. These wretched souls become fish.

PROF. A. TARENETSKY, in an elaborate work, "Beiträge zur Skelet und Schaedelkunde der Aleuten, Konaegen, Kena und Koljuschen, mit vergleichend anthropologischen Bemerkungen," published by the Russian Academy of Sciences, has come to very interesting conclusions concerning the still problematic origin of these hyperboreans. His researches are based upon thirty-five skulls and two complete Aleutian skeletons of the museum of the Academy, skulls of other East Asian natives, borrowed from the Medical Academy Museum, having been used for comparison. The conclusions of the author are as follows:—The Aleute skulls represent a strongly pronounced type and offer few traces of mixture with other tribes; notwithstanding some secondary differences, the skulls of both the western and the eastern Aleutes are similar to each other. As to the Konyag skulls, although they mostly are artificially deformed, they are nevertheless very similar to those of the American Indians on the one side and to those of the Aleutes on the other side. They also sharply differ from the skulls of both the western and the eastern Eskimos. Between the Kenais and the Koloshes there is no difference as regards their skulls, which are very near to the skulls of the Aleutes and the Konyags, representing the same type, which is only slightly altered with the Konyags by artificial deformation and by admixture of foreign blood. Consequently, the author makes the supposition that all the four stems have a common origin and are descendants of an Indian stem which belonged, not to the Eskimos, but to the American Red Indians. As to the skeletons of the Aleutes, they are very typical, especially on account of the structure of the very long extremities, and these peculiarities are not known in skeletons of other tribes. Only a few bones, unearthed a couple of years ago in Mongolia and belonging to some probably Turkish stem, offered some likeness with the Aleute skeletons. This find induces the author to believe that the populations of north-west America and Asia may have had a common origin, as they communicated across the Bering Strait. Only part of the Aleute and Konyag skulls had been described by Baer, the remainder being now described for the first time.

DR. T. K. ROSE's treatise on "The Metallurgy of Gold," the fourth edition of which has just been published by Messrs. C. Griffin and Co., provides students of metallurgy and managers of gold mines and smelting works with a concise and valuable statement of the existing conditions of the industry in which they are interested. As an Associate of the Royal School of Mines, Dr. Rose has been able to obtain particulars of practical developments of the metallurgy of gold in many parts of the world. His book has been revised and extended in order to keep it in touch with recent progress, and the changes will enable it to retain its position as a standard work on the subject with which it deals.

THE Hampstead Scientific Society appears to be in a flourishing condition, judging from the Report for 1901, just received. Among the subjects of lectures delivered before the Society during the session covered by the report are curious fish, lodestone lore, a glimpse at the work of Lord Kelvin, the amœba and its allies, the form of the earth, and the human eye. There is an astronomical section; and, as the Society possesses a telescope, observations can be made of celestial objects discussed at the class meetings. The natural history section has in preparation an account of the fauna and flora of Hampstead and its neighbourhood, which it is hoped will be sufficiently advanced for the first part to appear in the autumn of this year. The report points out that a natural history museum would greatly add to the scientific welfare of Hampstead; so that support should be given to the Hampstead Borough Council's scheme for a public museum and art gallery.

SOME time since, MM. Sabatier and Senderens discovered that metallic nickel, reduced from its oxide at as low a temperature as possible, possessed extraordinary catalytic power with regard to the addition of hydrogen, and from time to time they have published numerous syntheses carried out in this way. In the current number of the *Comptes rendus* is given an extremely elegant synthesis of methane based upon the same reaction. It was found that if either carbon monoxide or dioxide mixed with a slight excess of hydrogen is passed over reduced nickel at temperatures between 250° and 300° C., the oxide is reduced and methane is quantatitively produced. In spite of the fundamental importance of the synthesis of methane in organic chemistry, none of the syntheses realised up to the present are of sufficient simplicity and directness to be realised on the lecture table. The new method allows of the preparation of methane from its elements in two steps only, and will doubtless take its place as a standard lecture experiment.

THE additions to the Zoological Society's Gardens during the past week include two Martinican Doves (*Zenaida aurita*), a White-winged Zenaida Dove (*Melopelia leucoptera*) from the West Indies, presented by Mr. D. Seth Smith; a Black-backed Piping Crow (*Gymnorhina tibicen*) from Australia, presented by Mrs. J. Rose; three Derbian Zonures (*Zonurus giganteus*) from South Africa, presented by Captain H. M. Tristram, 12th Lancers; a Slow Loris (*Nycticebus tardigradus*) from Borneo, four Derbian Zonures (*Zonurus giganteus*) from South Africa, six Dark-green Snakes (*Zamenis gemonensis*) European, deposited; a Panda (*Ælurus fulgens*) from Nepal, a Green Bittern (*Butorides virescens*) from America, purchased.

OUR ASTRONOMICAL COLUMN.

NEW ANNUAL TERM IN THE VARIATION OF LATITUDE.—In the *Astronomical Journal*, vol. xxii. pp. 107-108, Prof. H. Kimura announces that from a detailed examination of the observations taken for variation of latitude he has detected a periodicity in the residuals obtained, which appears to indicate the existence of a hitherto unrecognised annual component. Most of the observations were collected in Prof. Albrecht's report in the *Astronomische Nachrichten*, No. 3734. The maximum amplitude of the new term is about 0″·03. At present it is impossible to examine the dependence of this element on geographical position, as the materials have been combined from all stations between $\phi=60^\circ$ N. and $\phi=21^\circ$ N., and the term as found would correspond to a mean latitude 42° N. A future series of observations in different parallels will possibly settle if the new component is a function of the latitude. From the variation curve it appears that the new term has zero values at 0·33 and 0·85, maximum at 0·0 and minimum at 0·57; a noticeable feature of this is that the zeroes lie near the equinoxes, the maxima and minima near the solstices.

OBSERVATIONS OF JUPITER.

JUPITER is now conspicuously visible as a morning star. During the ensuing spring and summer, observers of this planet will have some interesting features to reexamine, though his position, about 19 degrees south of the equator, cannot be regarded as favouring telescopic study. At the time of opposition on August 5 next he will, however, be placed 5 degrees further north than last year, and this will make a sufficient difference in his altitude to improve markedly the general definition of the markings. During the seven months from May to November, 1901, the writer, with a 10-inch reflecting telescope, secured observations of Jupiter on 76 nights, but the image was usually very indistinct and unsteady, and it was only on two or three occasions that the disc was sufficiently sharp to present the more delicate features satisfactorily.

This planet is always interesting from the large number and frequently conspicuous character of the details shown on his surface. These details consist of spots or patches of various tints, forms and sizes situated either on the dusky belts or on the alternating bright zones. The proper motions which affect these markings and displace their relative positions from day to day furnish a mass of material for prolonged study, while the oft-recurring and sometimes rapid changes taking place in their visible aspect provide an attractive field for the draughtsman.